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Forecasting Juvenile Delinquency

by

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Preventing and Treating Juvenile Delinquency
Some Basic Approaches[1]

THE JUVENILE delinquent is a perennial conversation piece. Like discipline, progressive education, or the Brooklyn Dodgers, delinquency can always evoke a good argument or a bad editorial. Nevertheless, the best data[2] (nothing can spoil a good argument like a few facts) on current trends of juvenile population and delinquency, if grasped in terms of their full significance, would chill any parent or any probation officer. "The facts, ma'am, are these."

The tidal wave of child population which now engulfs the elementary school will reach the secondary school by 1960 and increase the enrolment by about 32 per cent over the enrolment in 1949–50. This will give us a "normal" or "natural" increase (32 per cent) in the incidence of juvenile misconduct. It is pertinent to note that the increase in juvenile delinquency during the past few years has been more than four times the population increase and that this upward trend is continuing. Present figures, although somewhat incomplete, point to the fact that 1954 (the last year for which data are coming in) seems to have produced 475,000 court cases, or almost half a million delinquent children. Using 1948 as a base, the number of juvenile-delinquency cases in 1954 shows a 58 per cent increase against a corresponding 13 per cent increase in child population. If these ratios of increase continue to spiral upward, the 1,000,000 delinquents recently predicted by Benjamin Fine may soon become an awesome reality.

But these figures tell only the story of officially noted delinquent behavior. Research[3] on hidden or unrecorded delinquent behavior has revealed that in a given community as few as 1.5 per cent of infractions for which children could be apprehended actually culminate in official or legal action, even when the infractions are labeled as serious. As inadequate as the delinquency figures are, they must be taken as minimal estimates of the size of this over-all problem.

Principles of Community Action

What can the community do about it? This is a many-sided question to which there is no single or simple answer. The question involves all members of the community, lay and professional, juvenile and adult. The community can answer that it is doing something about the situation if those persons and agencies that come in close contact with children and youth make a systematic effort to (1) identify and refer those children who are vulnerable, prone, or exposed to the development of undesirable behavior; (2) study and diagnose pre-delinquent and delin-

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[1] W. C. Kvaraceus, "Preventing and Treating Juvenile Delinquency: Some Basic Approaches," *School Review*, LXIII (Dec. 1955), 477–79.

[2] a. *Some Facts about Juvenile Delinquency*. United States Children's Bureau Publication No. 340. Washington: Government Printing Office, 1953.

b. *News Notes on Juvenile Delinquency*. p. 1. United States Children's Bureau. Washington: Government Printing Office, 1955.

c. Benjamin Fine, *1,000,000 Delinquents*. Cleveland, Ohio: World Publishing Co., 1955.

[3] Fred J. Murphy, Mary M. Shirley, and Helen L. Witmer, "The Incidence of Hidden Delinquency," *American Journal of Orthopsychiatry*, XVI (Oct. 1946), 686–96.

quent children's behavior; and (3) utilize all community resources in an individualized and scientific treatment program based on prior study of needs. Again, this is not the job of any one agency. It is the cooperative responsibility of all community groups.

Let us consider more specifically what is to be included in the three essential phases of a comprehensive approach to treating and preventing delinquency.

Identification and referral. Is it possible for parents and youth workers today to spot those children who are prone, exposed, or vulnerable to the development of delinquent behavior patterns before they actually get into serious difficulty? The answer to this question must come from the research literature. The growing bibliography on this subject is promising in its implication that a large fraction, though not all, of the children who are finally to come into contact with child-welfare agencies, police, and courts can be identified early and screened off as those who will need help and assistance. On this step depends the community's preventive effort.

A careful survey of the literature indicates that the following instruments or techniques appear to have sufficient experimental data behind them to warrant further study and trial use to aid in the early detection of the child highly susceptible to delinquent adaptation in behavior:

Personal Index of Problem Behavior[4]

Minnesota Multiphasic Personality Inventory[5]

Porteus Maze Test[6]

Washburne Social-Adjustment Inventory[7]

Glueck Prediction Tables[8]

Behavior Cards: A Test-Interview for Delinquent Children[9]

K D Proneness Scale and Check List[10]

While no one of these techniques has been shown to be infallible, it is not unlikely that several of them will soon be able to identify the potentially delinquent child as well as present-day intelligence tests identify the high or low achiever in the classroom. This issue of the *Journal of Education* reviews and summarizes the recent validation studies of the *K D Proneness Scale and Check List* reported by a number of investigators employing a variety of criterion data.

Child study and diagnosis. The second phase of a community program of delinquency prevention and control must include the processes of

[4] a. Graham C. Loofbourow and Noel Keys, *The Personal Index.* Minneapolis: Educational Test Bureau, 1933.

b. Winifred C. Riggs and Arnold E. Joyal, "A Validation of the Loofbourow-Keys Personal Index of Problem Behavior in Junior High Schools," *Journal of Educational Psychology,* XIX (March, 1938), 194–201.

[5] a. Starke R. Hathaway and C. Charnley McKinley, *The Minnesota Multiphasic Personality Inventory.* New York: Psychological Corporation, 1943.

b. Starke R. Hathaway and Elio D. Monachesi, *Analyzing and Predicting Juvenile Delinquency with MMPI.* Minneapolis: University of Minnesota Press, 1953.

[6] S. D. Porteus, *Qualitative Performance in the Maze Test.* New York: Psychological Corporation, 1942.

[7] a. J. W. Washburne, *Washburne Social-Adjustment Inventory.* Yonkers-on-Hudson, New York: World Book Co., 1938.

b. J. W. Washburne, "An Experiment on Character Measurement," *Journal of Juvenile Delinquency,* XIII (Jan. 1929), 1–8.

[8] Sheldon Glueck and Eleanor Glueck, *Unraveling Juvenile Delinquency.* New York: Commonwealth Fund, 1950.

[9] Ralph M. Stodgill, *Behavior Cards: A Test-Interview for Delinquent Children.* New York: Psychological Corporation, 1949.

[10] W. C. Kvaraceus, *K D Proneness Scale and Check List.* Yonkers-on-Hudson, New York: World Book Co., 1953.

child study and diagnosis on which to plan an individualized treatment program. This raises the question of the adequacy of facilities for scientific study of the child and of the many outside forces that impinge on his development. Until certain basic child-study resources (including such workers as guidance personnel in the schools, pediatricians, psychologists, psychiatrists, social workers) are easily accessible to the individual child in need, little hope can be held out for real aid to delinquent children. Both delinquency prevention with the exposed or vulnerable child and delinquency control with the habitual offender postulate an understanding of *why* the child shows the particular form of aggressive-adjustive behavior that bothers the dominant elements in our society. Unless the community is successful in unlocking the meaning of a child's behavior, through the effective use of all modern techniques of child study, little can be done to rehabilitate or re-educate the predelinquent or delinquent child.

Specially planned treatment. A systematic and scientific program of delinquency prevention and control must culminate in a third phase: treatment specially planned to meet the personal, social, and environmental needs of the child as revealed in the study and diagnostic phase of the community's effort. Very frequently the processes of child study, diagnosis, and treatment will continue simultaneously or even blend into one operation. Here all community forces can be, and should be, brought into play for the benefit of the child, including the home and family, the school, the medical center, the churches, the YMCA, the "4-H" Club, the Boy Scout Troop, the playground center, settlement house, Boys' Club, and the like. The core of the community's program must always include the individually planned therapy program based on careful diagnosis of the child's needs. Treatment must be accompanied by a co-ordination of community effort to insure the particular service for the individual child at the strategic moment of need.

Corollaries of the principles. Several corollaries stem from these three principles. They include the following: (1) Co-ordination of all community resources which are in close contact with children and their families must be such as to result in a smooth meshing of community facilities. (2) Child-study, diagnostic, and treatment resources cost money and require a sizable budget; there are no dime-store solutions to a fifteen-billion-dollar crime problem. (3) Community practices and adaptations for delinquency prevention and control must always be based on proved knowledge and must reflect research at the local level as well as the findings of research elsewhere.

Evaluation of Community Programs

To aid the local community to inventory its efforts in the direction of prevention and control, a Scale for Appraisal of Community Progress in Delinquency Prevention and Control[11] has been developed and refined by the author. This observation instrument enables the community to measure its progress in seven areas on a five-point scale ranging from

[11] W. C. Kvaraceus, *The Community and the Delinquent*, pp. 168–84. Yonkers-on-Hudson, New York: World Book Co., 1954.

"Progressive and scientific" to "Neglected and backward." The seven areas include:

I. Initiating, Planning, and Coordinating a Program

II. Identifying and Reducing Danger Factors

III. Educational Standards and Practices

IV. Recreation and Group Work

V. Discovery and Referral of Problem Cases: Apprehension of Offenders

VI. Detention and Adjudication

VII. Social Treatment and Readjustment

Such an appraisal, if carried on with the co-operation of lay and professional workers in the community, including youths themselves, can alert the community to its strengths and weaknesses in the prevention and control of juvenile delinquency.

Definition of Juvenile Delinquent

Our discussion has sidestepped the crucial and difficult question: "Who is the juvenile delinquent?" — the subject of our discussion. Answering *legally* (and much too simply), the juvenile delinquent is the child of seven to seventeen (the age will vary according to state and frequently according to local residence) who violates any city ordinance or town by-law or commits an offense generally not punishable by death. But such a definition serves us poorly since it tells us little or nothing about the meaning of the child's behavior. *Clinically* the delinquent is a child who habitually resolves his personal-social problems through overt aggressive behavior, which society finds bothersome and contrary to its value identifications. For the juvenile this delinquency-aggression is purposive and adjustive; from the point of view of society, it constitutes an irritating maladaptation.

Studies of delinquents and non-delinquents have frequently uncovered only a few significant differences between the young offender and his more law-abiding counterpart. We can say that the delinquent is any boy on any street in any community. He is singular because he is the one who is usually putting up a fight in an effort to solve or work out his own problems. In so doing, he gives us more than a hint of his need for help — if we are alert enough to take the hint and do something about it.

ii

Two Instruments for Early Identification of Potential Delinquents

THIS PUBLICATION reviews and collates all the recent *K D Proneness Scale and Check List* validation studies which have come to the attention of the publisher and the author. A number of the more extensive studies were partially financed by the publishers (World Book Company) who made available, at no cost to the investigators, the prediction instrument to be validated in the experimental study. Needless to say, all the research studies which have been sponsored or which have come to the attention of the author and publisher have been reported regardless of the outcomes or the implications concerning the effectiveness of these prediction tools. With one exception, namely the Walton study of junior high school boys and girls, all of the distributions reported herein supplement the distributions reported for the various criterion groups in the 1953 revision of the author's *Manual of Directions* which accompanies the proneness materials.

K D Proneness Scale

The K(varaceus) D(elinquency) Proneness Scale consists of 75 multiple choice items that have been composed around focal points of difference in personal make-up, in home and family backgrounds, and in school experiences of delinquents and non-delinquents. The following items are typical of attitude and opinion questions utilized in the Scale:

Of the following, I would most like to be a

A. minister
B. teacher
C. policeman
D. prizefighter

Failure in school is usually due to

A. bad companions
B. lack of ability
C. lack of hard work
D. unfriendly teachers

Of the following games, the one I like best is

A. billiards
B. cards
C. chess
D. bowling

The seventy-five items have been analyzed and screened in terms of their capacity to differentiate at a statistically significant pace between delinquent and non-delinquent groups. The alternatives in each item are scored "plus" or "minus" in accordance with the trend noted in the item analysis. Responses that characterized the delinquent group are scored as "plus"; responses that were found to characterize the non-delinquents are scored as "minus." Separate keys are provided for boys and girls. These have been based on separate item analyses on male and female samples. An algebraic summation of the pluses and minuses constitutes the Scale score.

The investigations reported in this publication are all based on the author's keys. Each of these validation studies poses the following question: "How effectively does the K D Scale and key differentiate between certain criterion groups?" The researchers have employed a wide variety of criteria against which "to

test" the instrument. Their studies have been grouped under two major types of criterion: (1) legally adjudicated or official delinquents contrasted with non-delinquents, poor citizens, or exemplary youngsters; (2) "high morale" samples contrasted with "low morale" or malbehaving samples who are not officially delinquent.

Obviously the adequacy and the preciseness of the criterion measures represent the important and crucial key in all the validity studies. Fuzzy definitions as to who is to be entered in the "high morale" sample or who is to fall in the "poor citizen" category leave much to be desired in many studies. Here is one of the major obstacles that must be overcome by the researchers in any validation endeavor. The quality of the "proving experiment" will often turn on the precisions invoked in gathering adequate criterion data against which to check the instrument in question.

In reporting the individual studies and in drawing up the summary tables a special effort has been made in this review of research to compile distributions in four somewhat distinct rubrics: (1) officially adjudicated delinquents; (2) poor citizens, low morale youngsters, or malbehaving children; (3) unselected samples of school children; (4) high morale, exemplary pupils or good school citizens. This adds another group, "poor citizen" to the tri-criterion tables found in the revised Manual of Directions. Admittedly, even with these four categories much depends upon how a researcher defines a "good citizen" in a particular study. For example, the inclusion of "good school standing" in terms of school marks as a part of the over-all criterion of a "good citizen" may do much to change the complexion of the criterion sample from one study to another in spite of the fact that both investigators are utilizing the same general description of what constitutes a "good school citizen."

The K D Proneness Check List

The Check List was assembled using the findings of the major research studies reporting significant differences between delinquent and non-delinquent samples. A total of 70 items now make up this observation tool. Items showing the strongest bearing on potential delinquent behavior have been specially designated with an asterisk. All of the items have also been catalogued under the following three headings: Personal Factors, Environmental Factors — Home and Family, and School Factors. Use of the Check List assumes that information about the child is available to enable the appraiser to record the presence or absence of most of the factors listed in this instrument.

In contrast to the Scale, only a few studies of the Check List have been carried out in the field. Yet, from some points of view, the Check List commends itself potentially as a more functional instrument than the Scale and, hence, deserves a closer inspection. The Check List can be used, for example, without disturbing the pupils as in the eliciting of a test performance. The teacher, using all sources of information at her disposal, merely notes the presence or absence of certain traits, characteristics, home and school experiences. Those children who show a saturation of factors are screened off for more careful scrutiny and study.

Judging from the data on hand concerning the relationship between the Check List and the Scale, it appears that the instruments are not overlapping to any marked degree and that they each contribute somewhat independent estimates of delinquency proneness or exposure.

iii
Validity Studies of the Scale Using "Officially Delinquent" Criterion

THE FOLLOWING STUDIES report concurrent distributions for officially adjudicated delinquents and comparable non-delinquent samples. The officially noted delinquents have been drawn from state training schools, private institutions and from probation rolls. Studies having larger N's have been reported in considerable detail; studies having smaller N's are presented usually in terms of their summary statistics. Every effort has been made to present "all the data" so that the reader may judge for himself as to the effectiveness of this instrument.

The Bowling Green State University Study

Balogh and Rumage[12] have conducted one of the most searching validation studies of the *K D Scale* on a large sample drawn from a wide geographic base. Scores for 750 public school boys and 453 high morale boys were obtained from four states: Indiana, Michigan, Ohio, and Pennsylvania. The third criterion group included 182 delinquent boys drawn from five institutions in Michigan and Ohio.

[12] Joseph K. Balogh and Charles J. Rumage, "The Kvaraceus K D Juvenile Delinquency Proneness Scale; A Methodological Study of the Predictive Factors Involved in Delinquency Phenomena," Bowling Green, Ohio, 1955. Mimeographed report, 47 pp.

Table 1 reports the distributions of these groups with their means and standard deviations. The significant differences between means are reflected by the following critical ratios: high morale vs. public school group, 6.5; high morale vs. delinquent group, 15.5; public school group vs. delinquents, 11.3. All the values fall well beyond the "one per cent" level of confidence and, as would logically be expected, the highest level of confidence is reported between the delinquent and high morale groups.

Coefficients of variation (Pearson) measuring the relative variability of two or more frequency distributions were also reported. The delinquents showed a coefficient of variation of 5.1, the public school group .91, and the high morale group the lowest, .55. These findings indicate that the public school group is 5.6 times as variable as the delinquent sample and that the high morale group is 9.3 times as variable as those in the delinquent category; lastly the high morale group is 1.6 times as variable as the public school sample.

A more telling break-down of the distributions in the three rubrics by ages is reported by the authors in Table 2 on page 12. Balogh and Rumage[13] interpret this table as fol-

[13] Balogh and Rumage, *Ibid.*, pp. 13–15.

TABLE 1. Scale Scores of 182 Male Delinquents, 750 Public School Boys, and 453 "High Morale" Boys Obtained on the *K D Proneness Scale*

Scale Scores	*Delinquent Boys*	*Public School Boys*	*"High Morale" Boys*
30–32			
27–29		2	
24–26		1	
21–23	1	2	
18–20	3	4	
15–17	2	3	
12–14	7	7	1
9–11	11	7	1
6–8	14	13	2
3–5	19	28	2
0–2	18	37	12
−3– −1	35	50	29
−6– −4	23	84	32
−9– −7	15	82	58
−12– −10	14	112	78
−15– −13	9	104	57
−18– −16	7	95	79
−21– −19	3	63	53
−24– −22	1	34	30
−27– −25		14	14
−30– −28		8	4
−33– −31			1
M	−1.69	−9.95	−13.00
S.D.	8.70	9.09	7.17
N	182	750	453

lows: "By making comparisons for the various ages in the three categories, namely, public school group, delinquent group, and high morale group, the reader can be shown more refined figures relative to the categories studied. Again one can observe that the present study shows the Kvaraceus scale to be discriminating; however, this discrimination is most evident in the high morale group and the public school group. Although there is some tendency on the part of the delinquent group to make positive scores on the Kvaraceus scale, these figures do not appear statistically important. In this study, however, when comparing the delinquent group to the public school and high morale groups, the factor of statistical discrimination becomes much more evident. However, in the three group comparisons of all ages of this study, without exception, the delinquent group does show a high degree of proneness.

"The statistical breakdowns by ages in all three groups for purposes of comparison shows the following positive results:

1. In the twelve year old category the delinquent group is highest with 54.5 per cent; the public school group is next with 21.1 per cent; and the high morale group lowest with 5.1 per cent.

TABLE 2. Scale Scores of Three Criterion Groups According to Age Showing Number and Per Cent of Plus and Minus Scores: N 1,372

TABLE 2. Scale Scores of Three Criterion Groups According to Age Showing Number and Per Cent of Plus and Minus Scores: N 1372

Scale Scores	AGE																	
	12			13			14			15			16			17		
	Public School	"High Morale"	Delinquent	Public School	"High Morale"	Delinquent	Public School	"High Morale"	Delinquent	Public School	"High Morale"	Delinquent	Public School	"High Morale"	Delinquent	Public School	"High Morale"	Delinquent
30–32																		
27–29	1												1					
24–26													1					
21–23							1						1					1
18–20						1	1			1			1		2	1		
15–17	1		1						1							2	1	
12–14	4		1	1		4	1		1						1	1		
9–11				1			1		3	2			2	1	5	1		3
6–8	2	1	1	2		1	2	1	2	4		4	3		3			3
3–5	7		2	2		2	7	1	3	6		5	4	1	4	2		3
0–2	11	1	1	6	1	1	4	1	7	5	3	7	4	2	1	7	4	1
-3- -1	12	3	3	9	5	6	6	3	11	8	4	9	11	8	4	4	6	2
-6- -4	23	4	1	21	4	4	3	6	5	15	4	6	10	8	5	12	5	1
-9- -7	16	9		16	3	1	10	11	4	17	5	4	16	12	4	7	17	1
-12- -10	21	8		23	4	2	14	12	2	9	15	4	26	18	4	18	19	1
-15- -13	17	3		14	3	1	10	13	1	20	15	5	22	13	3	21	9	
-18- -16	5	3	1	17	6	1	14	19	1	14	11		23	13	2	21	25	
-21- -19	3	6		9	5		2	9	1	17	13	1	15	5		17	15	1
-24- -22		1		6	2		3	1		9	6	1	9	6		7	14	
-27- -25				2			1	3			4		5	3		6	4	
-30- -28				2						2	2		2			2	2	
-33- -31					1													
Per Cent Plus Score	21.1	5.1	54.5	9.1	2.9	37.5	21.2	3.7	40.5	14.0	3.6	35.0	10.9	4.4	42.1	10.0	84.1	64.7
Per Cent Minus Score	78.9	94.9	45.5	90.9	97.1	62.5	78.8	96.3	59.5	86.0	96.4	65.0	89.1	95.6	57.9	89.2	95.9	35.3
Number	123	39	11	131	34	24	80	80	42	129	82	46	156	90	38	129	121	17

2. In the thirteen year old category the delinquent group is highest with 37.5 per cent; the public school is next with 9.1 per cent; and the high morale group is lowest with 2.9 per cent.
3. In the fourteen year old category the delinquent group is highest with 40.5 per cent; the public school group is next with 21.2 per cent; and the high morale group is lowest with 3.7 per cent.
4. In the fifteen year old category the delinquent group is highest with 35.0 per cent; the public school group is next with 14 per cent; and the high morale group is lowest with 3.6 per cent.
5. In the sixteen year old category the delinquent group is highest with 42.1 per cent; the public school group is next with 10.9 per cent; and the high morale group is lowest with 4.4 per cent.
6. In the seventeen year old category the delinquent group is highest with 64.7 per cent; the public school group is next with 10.8 per cent; and the high morale group is lowest with 4.1 per cent.

"It is apparent that the degree of delinquency proneness is more clear cut in the delinquent group than in the two comparable groups. The disparity between the public school group and the high morale group is much less; in other words, the public school group and the high morale group are not nearly as delinquent prone as the delinquent group."

Balogh and Rumage believed that some degree of delinquency proneness as measured by the *K D Scale* might be obscured because it is possible for age ranges to overlap in school grades. They posed the question, "Does the addition of the age variable aid in distinguishing the degree of delinquency proneness in the total population more so than the grade factor?"

Table 3 presents the correlations between Scale scores and age; Table 4 presents the correlations between Scale scores and grade. With the exception of the delinquent group by grade, the coefficients of correlation are all negative. The implications, judging from the consistency trend, is that delinquency proneness decreases with age and grade. It is important to note that only two statistically significant coefficients (public school samples) are reported for age and grade. It may well be that no significant relationship exists between these two variables. The earlier findings of Piane[14] in the Dartmouth College study in which the effectiveness of the Scale appeared to diminish for boys in the upper grades of the high school is worthy of mention here. Two factors may tend to explain this tendency. First, the sophistication of the older pupils is such that they "see through the test" and provide the more socially acceptable answers in keeping with the dominant value system of school and community. This phenomenon is also reflected in the negative correlations that have been

[14] John M. Piane, "The Validation of the Kvaraceus Delinquency Proneness Scale and Check List," Unpublished Senior Thesis, Department of Psychology, Dartmouth College, June 1950, pp. 45.

TABLE 3. Pearsonian Coefficients of Correlation between Scale Score and Age by Criterion Groups

Criterion Group	*Number*	*r*	*z Value*	*S.E. of z*
High Morale	446	−.091	.09	.047
Public School	748	−.232	.24	.036
Delinquent	178	−.008	.01	.075

TABLE 4. Pearsonian Coefficients of Correlation between Scale Score and Grade by Criterion Groups

Criterion Group	*Number*	*r*	*z Value*	*S.E. of z*
High Morale	435	−.041	.04	.048
Public School	698	−.272	.28	.038
Delinquent	101	.13	.14	.100

reported with intelligence test scores. Second, retention rates for delinquents are notoriously low in most schools. The predelinquent and delinquent see little value in the school experience, are known to fail continuously, and eventually to drop out as soon as the law will allow. The combination of all these factors may well explain the "lessening of proneness" with boys in upper grades and perhaps explains why the use of the Scale seems less effective in the upper grades. Balogh and Rumage offer the possibilities that the small number of cases in their samples is such that any uncontrolled age-grade relationship may act to render a somewhat spurious correlation. In investigating this possibility they computed partial correlations by controlling first the age factor and then the grade factor on the public school group. Holding grade factor constant, a coefficient of partial correlation between Scale scores and age of .036 was obtained with a z value of .05 and a standard error of z of .036. Thus a statistically non-significant relationship between scale score and age can be seen. Holding the age factor constant, a coefficient of partial correlation of −.156 was obtained with a z value of .16 and a standard error of z of .038. Thereby a statistically significant relationship between total scale score and grade is revealed. The question raised by the researches is answered in the negative. The grade factor appears more closely associated with delinquency proneness than is the age variable. It would appear, insofar as the public school sample is concerned, that the younger the person, the more prone he is toward delinquency as measured by the Scale. In view of the fact that only older boys are apt to be institutionalized and the fact that older predelinquent boys are known to leave school early, there is need for more careful and extended study of the relationships between Scale score and these two variables before any hard and fast generalizations can be crystallized.

Concerning their findings, Balogh and Rumage[15] offer the following summary statement:

"The statistical validity of the *Kvaraceus Scale* cannot be fully corroborated by this study. Although the original Kvaraceus data show a clear-cut discrimination among the three

[15] Balogh and Rumage, *op. cit.*, pp. 46–47.

different groups namely, delinquent, public school, and high morale, the same conclusions are not borne out in this study. The element of statistical discrimination is highly discernible in the high morale group, somewhat discernible in the public school group and least discernible in the delinquent group. The degrees of discernibility among the three groups in this study are therefore not as pronounced as they are in the Kvaraceus study. On the other hand, the *Kvaraceus Scale* cannot be wholly discarded as a tool for delinquency proneness since the element of discrimination in both the high morale and public school groups appears to be statistically significant. As a matter of fact, the element of discrimination cannot be discarded even for the delinquent group since there is some degree of discrimination as shown by this report regarding vulnerability towards delinquent behavior, but as previously stated the discrimination factor is not as conclusively corroborated by statistical evidence.

"This report seems to further indicate that in the public school group, as age or grade increases, proneness to delinquency decreases. Further, according to the statistical evidence presented in this study, it appears that the addition of the age variable does not aid in distinguishing the degree of proneness in the total population more so than grade. In fact the opposite is true. The grade variable appears to be more closely associated with delinquency proneness than the age variable. This observation is somewhat antithetical to a study made by Balogh[16] in which he states that 'Over 71 per cent of the total delinquent boys were in the fourteen, fifteen, and sixteen year brackets.'

"Generally, the over-all results of this report tend to corroborate the *Kvaraceus Study*, however, with some refined statistical exceptions. Admittedly, the *Kvaraceus K D Proneness Scale* is definitely a valuable contribution to this vast field of human behavior. It is strongly urged that additional studies be made so that more accurate statistical refinements can be made toward a final statistical validation of the *Kvaraceus K D Proneness Scale*."

Eichorn Study

John R. Eichorn[17] used the *K D Proneness Scale* in a study aimed to validate a newly constructed non-verbal scale of delinquency proneness. In this investigation the verbal scale was administered to several hundred adjudicated delinquents drawn largely from two state institutions for delinquents. The resulting distributions were compared with those obtained on a like number of non-delinquents of the same age drawn from two large secondary schools on the outskirts of the City of Boston. Mean score of the non-delinquents was found to be −5.87 and the mean score of the delinquents was 2.27. These distributions are reported in Table 5.

Eichorn also reports a number of correlations between the Scale and intelligence test scores (Otis Test of

[16] Joseph K. Balogh, "A Survey of Juvenile Delinquency in Hillsdale County, Mich., for the Years 1935–1950; A Comparative Study," Bowling Green State University, Bowling Green, Ohio, 1952, pp. 81.

[17] John R. Eichorn, "The Construction and Evaluation of a Non-verbal Delinquency Proneness Scale," Unpublished Doctorate Thesis, Boston University, 1952, pp. 172.

TABLE 5. Distribution of Scale Scores of 200 Adjudicated Delinquents and 200 Non-Delinquents

Scale Scores	*Delinquents*	*Non-Delinquents*
24–26	3	
21–23	2	
18–20		
15–17	6	1
12–14	9	4
9–11	17	7
6–8	26	16
3–5	28	14
0–2	44	16
-1- -3	31	24
-4- -6	11	32
-7- -9	10	20
-10- -12	6	27
-13- -15	4	17
-16- -18	1	12
-19- -21		7
-22- -24	2	2
-25- -27		1
Mean	+2.27	-4.87
N	200	200

Mental Ability), chronological age, and with the newly-constructed non-verbal measure. His correlations follow: with intelligence test score −.353, with chronological age −.054, and with the non-verbal prediction instrument .311. Eichorn's study confirms previous findings reported in the Manual of Directions indicating that the Scale correlated negatively with intelligence as tested by the traditional ability measures. An insignificant but negative correlation is seen between scale score and age; a small but positive correlation is reported between the verbal and non-verbal prediction tools.

Connecticut State Institution Study

Francis B. Sullivan undertook to check-validate the Scale by administering it to 200 boys and girls who were divided into the following groups for purposes of comparison in terms of their performance on the prediction scale:

1. 50 boys in a public junior high school who were selected on the basis of high academic standing and class leadership and who were well thought of by all their teachers.
2. 50 adjudicated delinquent boys, institutionalized at the Connecticut School for Boys, Meriden, Conn.
3. 50 girls in a public junior high school who were selected on the basis of their high academic standing and class leadership and who were well thought of by all their teachers.
4. 50 adjudicated delinquent girls, institutionalized at the Long Lane School, Middletown, Conn.

TABLE 6. Scale Scores of Delinquent and Non-Delinquent Boys and Girls in Connecticut

Scale Scores	*Boys*		*Girls*	
	Public School	*Delinquents*	*Public School*	*Delinquents*
24–26				
21–23				1
18–20				1
15–17				1
12–14				1
9–11		3		6
6–8	1	5		3
3–5		6		11
0–2	6	8	2	10
-1- -3	4	6	10	4
-4- -6	5	6	7	6
-7- -9	4	7	6	3
-10- -12	9	7	9	2
-13- -15	8	2	11	1
-16- -18	6		4	
-19- -21	4		1	
-22- -24	3			
-25- -27				
Mean	-9.77	-3.88	-9.16	+2.14
S.D.	9.85	6.76	5.47	6.33
N	50	50	50	50

Table 6 presents the distributions of the four criterion groups. A close study of these distributions reveals substantial differences between the delinquent and non-delinquent samples. Eighty-two per cent of the delinquent boys obtained a Scale score higher than the mean of the public school boys; 44 per cent of the delinquent boys were recorded as having plus scores whereas only 14 per cent of the public school boys obtained positive scores; 26 per cent of the public school sample showed scores lower than that obtained by any delinquent boy. The distributions for the girl samples is even more differentiating than for boys, although other validation studies report the opposite trend. Sullivan reports that 94 per cent of the delinquent girls obtained a score higher than the mean of the public school girls; no public school girl obtained a score as high as the mean (+2.14) of the delinquent girls; 48 per cent of the delinquent girls obtained a higher score than that registered by any public school girl. Although the Sullivan study was conducted on a relatively small sample, it does provide some validation reinforcement to the differentiating power of the Scale which is particularly noticeable between the scores of the public school and institutionalized girls.

O'Hare Study: Shirley Industrial School for Boys

In a study of the Check List at the Shirley Industrial School for Boys in Massachusetts, Thomas J. O'Hare[18]

[18] Thomas J. O'Hare, "A Correlation Study of the K D Proneness Scale and Check List," Unpublished Master's Thesis, Boston University, 1954, pp. 58.

also administered the Scale to 95 boys residing in the open institution and to 25 inmates who had been placed in the security unit of the same institution. The latter group can be considered as a particularly hardened sample of overt and aggressive delinquents who were closely confined for study and treatment as well as for safety to self and society. Distributions for these two delinquent groups are presented in Table 7. O'Hare reported slight differences between those two distributions indicating higher positive scores for the most difficult institutional subjects and somewhat lower scores for those delinquents who were making progress in the open institution program. O'Hare's findings in regard to the Check List will be presented in a later section of this report.

Springfield Boys' Club Study

Fifty-two carefully selected boys, ages 9 to 18, representing different interest groups, were given the *K D Proneness Scale* in a minor validation study in the Springfield (Mass.) Boys' Club by L. Kalesnik and J. Alissi, students at Springfield College.

The validity of the Scale was checked using four criterion groups: (1) *legal delinquents* — those who were on probation, on parole, or who showed a recent and official court contact; (2) *potential delinquents* according to subjective ratings of the Boys' Club staff; (3) *borderline cases* representing marginal cases as rated by agency staff; (4) "*good kids*" as rated by agency workers on the basis of observations in and around the Boys' Club.

The seven cases known to be officially delinquent showed a range in Scale score of −5 to +17 with a median of +1. The potential delinquents (15 cases) included a group of youngsters with whom the agency, school or community had experienced "a lot of trouble" but who were not officially delinquent. This criterion group showed a median score of 0 with a range of −13 to +20. The borderline group (13

TABLE 7. Distribution of Scale Scores of 95 Delinquents in the Open Institution, Shirley School for Boys and 25 Inmates of the Security Unit

Scale Scores	*Delinquents Open Institution*	*Delinquents Security Unit*	*Total*
14–16	1		1
11–13	3		3
8–10	6		6
5–7	10	6	16
2–4	10	6	16
1- -1	18	5	23
-2- -4	16	1	17
-5- -7	11	2	13
-8- -10	9	4	13
-11- -13	6	1	7
-14- -16	3		3
-17- -19	2		2
Mean	-1.62	+0.014	-1.35
S.D.	7.01	5.70	6.71
N	95	25	120

cases), so classified because the agency workers in their screening process felt that the subject could not be classified clearly as "a good kid" nor could he be rightfully categorized as a potential delinquent, showed a median Scale score of −3 and a range from −14 to +3. Seventeen boys who rated high in leadership and in exemplary behavior were placed in the "good kid" category. The median score of this group was reported as −12 with a range of −6 to −20. The preponderance of minus scores within the "good group" and the high negative median score bears mention. Although the criterion samples are small, this study is reported because of the care taken in identifying and categorizing the youngsters in the four critical rubrics.

Scores of Unwed Mothers

In a small sample study, Eli Forsley administered the Scale to 20 unwed mothers who were confined at the Tewksbury (Mass.) State Infirmary and to the same number of Y.W.C.A. girls from Camp Weedamoor in Westford, Mass. The unwed mothers ranged in age from 16 to 21; the Y.W.C.A. girls represented a somewhat younger age group covering the span 11–18. A study of the distributions revealed a median of −3.5 for the unwed mothers and a median of −14 for the Y.W.C.A. group. The range of scores for the Y.W.C.A. camp girls was +10 to −23, for the unwed mothers +11 to −15. In view of the very small sample and the lack of adequate controls in the contrasting samples, no broad generalizations can be drawn. However, the differences in the median scores between the two groups implies that lower negative scores are more frequently associated with girls falling in the delinquent category.

iv

Validity Studies of the Scale Using Non-Legal Malbehaving Criterion Groups, "High Morale" Subjects, and Unselected School Samples

THE FOLLOWING STUDIES include those investigations which employed a variety of criterion data, none of which involved legally adjudicated delinquents. These validation studies usually used "good citizen" or "high morale" groups, random samples of the total school population in certain grades, and malfunctioning groups including misbehaving children, truants, detention room habituées, and those ranked low in deportment. Assuming that there are but few hidden delinquents in these samples, these investigations singly and collectively, raise the following question: "Can the Scale differentiate between degrees of acceptable or unacceptable behavior within a narrow range of deviate behavior which falls this side of delinquency as officially designated by legal court ruling?" The difficulties of adequate criterion measures which were discussed earlier need to be restated again. It is a simple matter to identify an adjudicated delinquent; it is a much more difficult task to identify the "malbehaving youngster" and to differentiate him from an "average boy" or even a "good citizen." The different standards of acceptable or good conduct that are held up by different youth workers may only reflect varying degrees of irritability, forbearance, or restraint on the part of the raters rather than any true difference between the categories that are achieved in the screening process. Nevertheless, assuming that trained youth workers can tell the difference between "good citizens" and "poor citizens" and that they do so, in fact, in the reported studies, can the *K D Proneness Scale* do the same? Let us, then, examine the research findings.

Junior High School Study: Malden, Massachusetts

Walton[19] conducted a validation study of the *K D Proneness Scale* on a junior high school group in Malden, Mass., using conduct ratings by guidance personnel on a three-point "morale" scale. The following definitions and ratings were employed in gathering the criterion data:

A — *High Morale*: Superior school citizenship; works up to capacity although not necessarily on the honor roll; is exceptionally well thought of by all teachers.

B — *Average Morale*: good general character but not particularly outstanding; seldom or never in trouble.

C — *Low Morale*: very poor school citizenship; unco-operative and frequently in trouble; known to be troublesome in and out of school.

Walton's study was conducted on 160 boys and 228 girls drawn at random from two junior high schools which were located in sections of the

[19] Arline J. Walton, "A Further Study of the *K D Proneness Scale*," Unpublished Master's Thesis, Boston University, 1953.

city where the incidence of delinquency was higher than in other neighborhood areas. Table 8 reports the distribution of the three criterion groups of boys and Table 9 presents similar tri-distributions for the girl subjects. The boys show a marked step-up between median scores for the groups in accordance with expectancy as indicated by the behavior ratings. No boy assigned an "A" rating received a Scale score higher than −1; whereas approximately 25 per cent of those boys assigned a "C" rating were found to score above this same point in the distribution. While there is considerable overlapping among the three groups, there is a marked tendency visible for those receiving the lowest ratings to obtain Scale scores indicating a greater tendency toward non-conforming and bothersome behavior.

Similar relationships exist between the school morale ratings and the Scale scores for the girl subjects. No girl assigned a "C" rating received a Scale score below −10. The "A" and "B" morale groups were skewed in the direction of minus or negative scores suggesting some immunity from delinquency proneness.

Walton also checked the Scale scores of all boys who had frequent contacts with the attendance officer in truancy check-ups. Out of 20 attendance cases, 13 boys or 65 per cent obtained Scale scores above the median (−7.5 for grade 8 and −9.8 for grade 9) for their grade. However, considerable scatter was noted. The truants ranged from +4 to −16

TABLE 8. Distribution of Scale Scores of Junior High Boys according to Three Criterion Groupings in Malden, Massachusetts

Scale Scores	Grade 8			Grade 9		
	A	B	C	A	B	C
18–20			1			
15–17						
12–14						
9–11					1	
6–8						2
3–5		6	3		1	1
0–2		5	3		6	3
−3– −1	3	14	3		5	3
−6– −4		12	3		12	4
−9– −7	1	10	5	2	10	2
−12– −10	2	16	4	1	14	4
−15– −13	2	9	3	3	8	3
−18– −16	2	5	1	2	9	2
−21– −19	1	3		3	3	
−24– −22		2		1	1	
−27– −25				2		
Median	−12.5	−7.7	−6.5	−17	−9	−5.6
N	11	82	26	14	70	24

TABLE 9. Distribution of Scale Scores of Junior High Girls according to Three Criterion Groupings in Malden, Massachusetts

Scale Scores	Grade 8			Grade 9		
	A	B	C	A	B	C
12–14		1				
9–11			1			
6–8					1	
3–5	1	7		1	1	
0–2		4	1		1	3
−3– −1		7		2	3	1
−6– −4	2	9	1	2	2	2
−9– −7	3	7	1	6	12	4
−12– −10	3	7		5	13	4
−15– −13	3	7		5	2	
−18– −16	2	5		3	3	
−21– −19		2		3	3	
−24– −22				1	2	
−27– −25		1				
Median	−10.5	−6.7	−2	−11.3	−9.9	−7.3
N	14	57	4	28	43	14

in grade nine and from +9 to −13 in grade eight.

As a further refinement, Walton drew off the ten highest scores indicating the most prone boys and the ten lowest or negative scores for boys indicating freedom from delinquency tendencies. The same procedure was utilized with the girl subjects. A close look was given these boy and girl samples found in the tails of the distribution. The following variables were checked: morale rating, truancy, tardiness, delinquency record, marks of teachers in academic work, test results of ability, and achievement.

Two cases of known and officially recorded delinquency were found in the high scoring boys group. Four of the ten in the most-prone group had received a "C" rating. By way of contrast only one of the 14 boys receiving the ten lowest or delinquency-free scores had a low morale rating of "C." The delinquency-prone group was found to be saturated with failure marks whereas fifty per cent of the low-scoring or delinquency-free group had no recorded failure grades. Similarly the distributions of I.Q.'s favored the boys receiving the highest negative scores. The same trend was observed with scores on reading and achievement tests. On all variables studied a pronounced discoloration characterized the group of boys receiving the highest positive scores in marked contrast to a brighter constellation of favorable factors among those scoring at the opposite extreme.

In the parallel study for girls, the same unfavorable picture is to be found for the subjects showing the highest proneness Scale scores. Seven

cases or 65 per cent of the low-scoring or delinquency-free group were found to be on the honor roll. On the other hand the high-scoring or delinquency-prone group showed 70 per cent as having failure marks. Scores on the standardized tests were generally high for those with minus scores. One girl receiving a "C" or low morale rating was found in the high positive scores; no "C" ratings were noted among the negative scoring extremes. Three of the ten girls receiving high positive scores showed tardiness records and two of the lowest scoring subjects had been recorded as late for school. No truancy cases were to be found in either extreme set of scores. Individual case exploration does indicate a less favorable picture for the high-positive scorers as compared with the high-negative scorers on the *K D Scale*, although this contrast is not as pronounced as for the boys.

Barre City Schools (Vermont) Study

Patterson's[20] study aimed to determine the relationship between pupil citizenship as rated by teachers and delinquent tendencies as measured by the *K D Proneness Scale and Check List* scores.

The *K D Proneness Scale* was administered to the 162 pupils in grades 5–8 of the Barre City Schools whom the teachers had listed as their "best" and "poorest" citizens. The term "best" citizen referred to those pupils who were not only well adjusted themselves but were also concerned for the common good of the group of which they were a member, while the term "poorest" citizen referred to those pupils who showed definite conflict with the rules and regulations as developed by the child's social group. One hundred nine "best" citizens (41 boys and 68 girls) and 53 "poorest" citizens (43 boys and 10 girls) were thus selected.

Patterson's findings show a range in score of the "best" boy citizens from +5 to −24 with a mid-score of −13, and of the "best" girl citizens from +11 to −22 with a mid-score of −6. There is a range in score from +9 to −21 for the "poorest" boy citizens with a mid-score of −7, and a range in score for the "poorest" girl citizens from +4 to −11 with a mid-score of −1.5. These results indicate a trend for the poor citizens, boy and girl, to average closer to 0 and for good school citizens to average higher minus scores. However, both criterion groups fall well below the plus scores which purport to be more typical of the nonconforming and delinquent group. These scores have been incorporated in the summary table.

Baltimore (Maryland) Study on Parochial School Girls

The *K D Proneness Scale* was administered by Sister Isabelle McDonell[21] to three hundred girls at Seton High School in Baltimore, Md., during the school year of 1951–1952. To determine the one hundred girls who would be included as "good" students, and the one hundred as "poor" students, a case conference of key

[20] Charles C. Patterson, "The Relationship between Pupil Citizenship as Rated by Teachers and Delinquent Tendencies as Shown by the *K D Proneness Scale and Check List*, Unpublished Master's Thesis, Boston University, 1952, pp. 67.

[21] Sister Isabelle McDonell, "A Study of the Validity of the *K D Proneness Scale*," Unpublished Master's Thesis, Catholic University, 1954.

personnel was held. The principal, teachers, and counselors were asked to make their selection on the basis of students' background, scholarship, and general conduct. One hundred "unselected" students (every fifth student from an alphabetically arranged list) were also tested. The subjects were selected principally but not exclusively from the ninth and tenth grades. Ages ranged from fourteen to seventeen years.

Table 10 shows that the widest range of scores, from +11 to −24, was found in the "good" group. The scores for the "poor" group ranged from +11 to −21. The scores for the "unselected" group ranged from +8 to −24. There were ten students in the "good" group and ten students in the "unselected" group with positive scores, while twelve students in the "poor" group had positive scores.

The mean scores vary less than one for each group. The greatest variation is found between the "good" group and the "poor" group with mean scores of −8.7 and −7.8 respectively. Variations in Standard Deviation among the groups are not statistically significant.

Statistical checks between the Scale scores for the three criterion groups uncovered the following Critical Ratio: 3.103 between the "good" and the "poor" students; 2.857 between the "good" and the "unselected" girl students; and .357 between the "poor" and the "unselected" girls. In spite of the two reported "statistically significant" findings, the heavy overlap between the groups is such as to indicate little promise in the Scale for this type of age-grade female sample, assuming the criterion of "goodness" and "poorness" to be itself reliable and valid.

An item analysis using these criterion groups revealed that only twenty of the alternatives in the seventy-five multiple choice questions distinguished significantly between the 100 "good" and the 100 "poor" students. These differentiating alternatives were found in the following numbered items in the

TABLE 10. Distribution of K D Scale Scores Obtained on Three Criterion Groups of Girls in Seton High School, Baltimore, Maryland

Scale Scores	*"Good" Students*	*"Poor" Students*	*"Unselected" Students*
9–11	1	1	
6–8		1	1
3–5	6	3	2
0–2	3	7	6
−1– −3	12	13	14
−4– −6	7	17	13
−7– −9	22	18	21
−10– −12	20	16	21
−13– −15	18	10	12
−16– −18	7	12	7
−19– −21	3	2	2
−22– −24	1		1
Mean	−8.7	−7.8	−7.9
S.D.	2.1	2.1	1.9
N	100	100	100

Scale: 6, 13, 22, 24, 28, 36, 47, 48, 53, 55, 60, and 67.

Of all the investigations that have come to the author's attention, this study provides the least confirmation of any potential in the Scale to distinguish, in practical fashion, on this kind of selected criterion. It must be pointed out that the criterion used is devoid of the delinquency taint.

Miscellaneous Minor Studies

A number of minor studies utilizing small samples have been reported to the author since the original Manual was published in 1950. These studies are reported herein for the sake of completeness and because recurring trends in a number of smaller studies can help to confirm or deny the validity of a particular instrument.

West Springfield (Mass.) High School study. With the help of the teachers two extreme criterion groups of boys and girls were screened representing "high morale" pupils and those that were considered to be "problems." The male sample consisted of 19 high morale boys and 16 problem boys; the female sample was made up of 24 high morale girls and 16 problem girls. The Scale was administered to these subjects by A. Hawthorne, and the following medians were reported: high morale girls −15.5 and problem girls −11; high morale boys, −17 and problem boys, −2. The scores for the high morale girls ranged from −5 to −32, for problem girls from +4 to −20. Ranges for the male scores were −8 to −32 for the high morale youngsters and +19 to −20 for those showing some behavioral difficulties. The skewness in the exemplary samples toward consistently lower minus scores and the incidence of plus scores in the problem group are somewhat suggestive of the Scale's potential to achieve its intended purpose. However, the high median score in the minus range reported for the "problem" girls offers little support that plus scores characterize the disturbing girls as a group.

Somerville (Mass.) Junior High School study. With the assistance of the guidance counselor, W. Ford identified 16 junior high school boys who were judged from behavioral criteria as "vulnerable" or likely delinquents. The Scale was administered to this selected group. Scores ranged from +13 to −14 with a median of −1.5.

Richmond (Calif.) Junior High School study. In connection with a University of California doctorate study now in process, Frank Granucci administered the Scale to three criterion groups of boys and girls: "high morale," "average," and "problem" pupils in the Junior High Schools of Richmond, Calif. Table 11 presents this investigator's findings and reports a consistent and marked trend for the malbehaving group to receive higher proneness scores than their better behaved peers. The complete absence of plus scores in the high morale samples is a noteworthy contrast to the incidence of such scores in the problem groups.

St. Anne's Episcopal School study. The *K D Proneness Scale* was administered to 30 girls in grades 6–12 at St. Anne's Episcopal School (Arlington Heights, Mass.) by Sister Theodora, O.S.A. The scores ranged from +13 to −22. All of these girls had been boarders at the school from one to ten years and were well known to the school staff. From the school records a composite conduct rating was obtained for each girl for the

TABLE 11. Scale Scores of High Morale, Average and Problem Boys and Girls in Richmond (California) Junior High Schools

	Boys			*Girls*		
Scale Scores	*High Morale*	*Average*	*Problem*	*High Morale*	*Average*	*Problem*
9–11			3			
6–8			4			1
3–5			2			2
0–2			1			1
-1- -3		4	7		2	8
-4- -6			3	1	2	6
-7- -9	1	5	3	1	5	
-10- -12	1	1	1	2	3	4
-13- -15	2		1	1	2	3
-16- -18	2			1		
-19- -20	4	2		1	1	
-22- -24	1		1			
-25- -27	2					
Mean	-17	-8	-1.5	-11	-9	-3
N	13	12	25	7	15	25

preceding school year. This rating was based on demerits turned in at monthly intervals by the teaching and supervising personnel who are sisters in the Order of St. Anne. The sisters live in very close contact with the girls and are able to base their ratings on an intimate knowledge of each girl's behavior and attitudes. In their judgments they are guided by a code of rules but are free to decide the individual merits or demerits of each case as they see fit. The general atmosphere of the school is permissive and accepting rather than authoritative and punitive.

The two variables were correlated using the Pearson Product-Moment formula and the coefficient was found to be .57. A study of the bivariate distribution chart revealed that the two upper cases and the lowest case in each distribution showed perfect correlation. In view of the suggested proneness of the top case having a score of +13 a *K D Check List* was used. A "Yes" count of 41 resulted showing a high degree of saturation of factors inimical to wholesome personal-social development. With the exception of the two positive scores, the Scale indicated a relative absence of delinquency-charged responses in this sample. The correlation appearing in this minor study represents one of the highest reported with the use of conduct rating criterion.

Junior Division study, Brookline (Mass.) High School. G. Joslin reports a small sample study in which the Scale was administered to pupils in the Junior Division at the Brookline (Mass.) High School. The Junior Division represents a special class consisting of retarded pupils who have not completed successfully the work of the elementary school but who have been advanced because of their chronological and social development. The scale was used as a check of the vulnerability of this special group to delinquency. Since none of the class members was believed or known to fall in the delin-

quent or predelinquent category, these distributions are reported as representative of the general or average group, although the hypothesis that membership in such a low-prestige academic group does generally tend to make a child vulnerable to overt and aggressive behavior in the community could be advanced and the scores might be inspected in terms of their vulnerability index. The sixteen boys in this group ranged in score from +4 to −24 with a mean of −5; the eight girls in this special class ranged in score from +7 to −14 with a mean of −2.

Junior High School boys, Keene, N. H. Two criterion groups representing the usual behaviorial extremes were identified and tested by J. A. Mosley. These two groups consisted of 25 "problem" boys identified with the help of a local law enforcement officer and 25 "high morale" boys carefully selected by both the Student Council and the junior police force. This represents a singular study in the use of peer-group ratings to select the exemplary pupils. The "problem" boys ranged in score from +18 to −16 and were recorded with an average score of +2.24; the "high morales" ranged in Scale score from 0 to −24 and registered an average of −11.44. The absence of plus scores in the "good" sample and the wide difference between means of the two groups provides further evidence of the validity of the Scale in this minor study.

Mosley also ran a number of correlations between the Scale and the following factors: school marks, Check List Scores, days absent, and intelligence test scores on the California Test of Mental Maturity. These correlations were obtained separately for each criterion group and are reported in Table 12.

To some unknown extent the homogeneity of the "high morale" group served to lower all the correlations in this small sample. Of particular interest is the high negative correlation between Scale scores and the boys' school marks. Being a "problem" may well mean being bankrupt in school and vice versa. The low negative correlation between the Scale and the Check List is difficult to interpret since it is counter to all other correlations reported between these two measures which have showed a continued positive relationship. Interpreted literally this result would imply that those scoring high on the Scale tend to be relatively free of the factors inimical and hazardous to personal and social development as reported by the Check List items. The positive relationships with number of days absent from school is low but in keeping with what might logically be expected.

TABLE 12. Correlations between K D Scale Scores and Four Selected Variables

Variable	*"Problem" Boys*	*"High Morale" Boys*
Academic average	−.415	−.189
K D Check List	.460	−.070
Number days absent	.210	.040
Intelligence Test (CMM)	−.265	.001
N	25	25

Industrial Arts students, Manchester (N. H.) West High School. Twenty-eight boys enrolled in one section of the Industrial Arts course in Manchester West High School in New Hampshire were given the *K D Proneness Scale.* The class was considered a representative group of high school boys and no criterion data were reported.

The median score of the group was found to be −12.5 with a range of scores from +4 to −23. These results are treated as representative of the general population of high school males.

V

Summary Tables of Scale Scores for Boys and Girls

USING ALL the distributions presented in the previous pages for the various criterion groups, summary tables for boys and for girls have been compiled using four rubrics: officially adjudged delinquent, "problem children," unselected school children and "high morale" youngsters. The last column in each table also presents a total of all non-delinquents which is a summary of the last three categories. Except for the Walton study, all of these distributions represent new data and are supplementary to the distributions provided in the 1953 revision of the Manual. Tables 13 and 15 list the investigators, the sources of the samples, and the N's which have been entered in each rubric of the summary tables 14 and 16 for boys and girls.

A study of both summary tables reveals a sizeable difference in mean score for delinquents and high morale groups. The mean score for delinquent boys falls at +0.5 and for "high morale" boys at −12.6. The standard deviation for most criterion groups is in the vicinity of 8 points except for the "high morale" group which falls just short of 7, suggesting greater homogeneity in this group as might be anticipated. The steady and consistent trend in the step-down of mean scores also reaffirms the Scale's potential for discriminating between these criterion groups.

A similar picture is presented in the summary distributions for the girls. The mean score for delinquent girls is reported as +1.3 whereas the mean for the "high morale" girls falls at −9.3. Standard deviations for the girls are slightly less than those reported for boys, with the delinquent girls showing the highest degree of variability, as might be expected. The steady step-down in mean scores are consistent from one criterion group to the next but are not as marked as in the distributions of the males. However, the overlappings between the various distributions is considerable for both sexes. These data attest to the fact that the *K D Proneness Scale* has succeeded in differentiating somewhat between the criterion groups but that this differentiation is by no means mutually exclusive even in the region of the high positive and high negative Scale scores.

However, with the lessons learned from these studies, it may now be possible to construct a proneness scale anew which may achieve discriminating score values which function to identify more effectively the delinquent and potentially delinquent from their law-abiding peers.

TABLE 13. Investigators, Sources of Samples, and N's Included in Summary Table for Boys

		N
1. *Studies of Adjudicated Delinquents*		
Balogh, J. and Rumage, C.	Five institutions for delinquent boys from the states of Michigan and Ohio	182
Eichorn, J.	Institutional cases from the Lyman and Shirley Schools, Reception Center, Private Training Center, and Citizenship Training Center in Massachusetts	200
O'Hare, T.	Shirley School for Boys in Massachusetts	120
Kalesnik, L. and Alissi, J.	Springfield Boys' Club	7
Sullivan, F.	Connecticut School for Boys, Meriden, Conn.	50
2. *Studies of Problem Boys*		
Ford, W.	Somerville, Mass. Junior High School	16
Granucci, F.	Richmond, Calif. Junior High	26
Hawthorne, A.	West Springfield, Mass. Senior High	16
Kalesnik, L. and Alissi, J.	Springfield Boys' Club	15
Mosley, J. A.	Keene, N. H. Junior High School Problem Boys selected by teachers and law enforcement officer	25
Patterson, C.	Barre, Vt. "Poorest Citizens" in grades 5–8 selected by teachers	43
Walton, A.	"Low Morale" boys selected from two junior high schools of Malden by their guidance teachers	50
3. *Studies of Unselected School Boys*		
Balogh, J. and Rumage, C.	Public school boys from the states of Indiana, Michigan, Ohio, and Pennsylvania	750
Eichorn, J.	Adolescent boys from Massachusetts town adjacent to Boston	200
Finfroch, J.	Forest Hills Junior High School, Pittsburgh, Pa.	42
Granucci, F.	Richmond, Calif. Junior High School	12
Joslin, G.	Junior Division at Brookline, Mass. High School (retarded)	16
Kalesnik, L. and Alissi, J.	Springfield Boys' Club	13
Kouletsis, P.	Industrial Arts Students at Manchester, N. H. West High School	28
Walton, A.	"Average Morale" boys selected from two Junior High Schools of Malden by their guidance teachers	152
4. *Studies of "High Morale" Boys*		
Balogh, J. and Rumage, C.	"High Morale" boys (usually members of the Student Council) from the states of Indiana, Michigan, Ohio, and Pennsylvania	453
Granucci, F.	Richmond, Calif. Junior High	13
Hawthorne, A.	West Springfield, Mass. Senior High	19
Kalesnik, L. and Alissi, J.	Springfield Boys' Club	17
Mosley, J. A.	Keene, N. H. Junior High School boys selected by teachers	25
Patterson, C.	Barre, Vt. "Best Citizens" in grades 5–8 selected by their teachers	41
Sullivan, F.	Public Junior High School in Connecticut	50
Walton, A.	"High Morale" boys selected from two Junior High Schools of Malden by their guidance teachers	25

TABLE 14. Summary of Combined Distributions for All Male Criterion Groups, *K D Proneness Scale* Scores

Scale Scores	*Delinquents*	*Problems*	*Unselected School*	*"High Morale"*	*Total Non-Delinquents*
27–29			2		2
24–26	3		1		1
21–23	3		2		2
18–20	3	5	4		9
15–17	10	3	5		8
12–14	18	4	11	1	16
9–11	37	7	15	1	23
6–8	60	12	36	3	51
3–5	67	21	57	3	81
0–2	92	19	84	19	122
-1- -3	89	26	112	39	177
-4- -6	61	21	144	45	210
-7- -9	45	26	147	84	257
-10- -12	35	23	172	113	308
-13- -15	20	14	144	85	243
-16- -18	10	7	128	108	243
-19- -21	3	2	81	75	158
-22- -24	3	1	39	40	80
-25- -27			21	19	40
-28- -30			8	6	14
-31- -33				2	2
Median	+0.5	-2.9	-8.75	-12.6	-9.6
S.D.	8.0	8.6	8.7	6.9	8.6
N	559	191	1213	643	2047

TABLE 15. Investigators, Sources of Samples and N's Included in Summary Table for Girls

		N
1. *Studies of Adjudicated Delinquents*		
Forsley, Eli	Tewksbury State Infirmary — Sex Deviates	20
Sullivan, F.	Longlane School, Middletown, Conn.	50
2. *Studies of Problem Girls*		
Granucci, F.	Richmond, Calif. Junior High	25
Hawthorne, A.	West Springfield, Mass. Senior High	16
Patterson, C.	Barre, Vt. "Poorest Citizens" in grades 5–8 selected by teachers	10
Sister Isabelle	Seton High, Baltimore, Md.	100
Walton, A.	"Low Morale" girls selected from two junior high schools of Malden by their guidance teachers	18
3. *Studies of Unselected School Girls*		
Finfroch, J.	Forest Hills Junior High School, Pittsburgh, Pa.	50
Forsley, E.	Y.W.C.A. Girls from Camp Weedamoor in Westford, Mass.	20
Granucci, F.	Richmond, Calif. Junior High	15
Joslin, G.	Junior Division at Brookline, Mass. High School (retarded)	8
Sister Isabelle	Seton High, Baltimore, Md.	100
Walton, A.	"Average Morale" Girls selected from two Junior High Schools of Malden by their guidance teachers	100
4. *Studies of "High Morale" Girls*		
Granucci, F.	Richmond, Calif. Junior High	7
Hawthorne, A.	West Springfield, Mass. Senior High	24
Patterson, C.	Barre, Vt. "Best Citizens" in grades 5–8 selected by teachers	68
Sister Isabelle	Seton High, Baltimore, Md.	100
Sullivan, F.	Public Junior High School in Connecticut	50
Walton, A.	"High Morale" Girls selected from two Junior High Schools of Malden by their guidance teachers	42

TABLE 16. Summary of Combined Distributions for All Female Criterion Groups *K D Proneness Scale* Scores

Scale Scores	*Delinquents*	*Problems*	*Unselected School*	*"High Morale"*	*Total Non-Delinquents*
27–29					
24–26					
21–23	1				
18–20	1				
15–17	1				
12–14	1		1		1
9–11	7	2		2	4
6–8	6	2	3	1	6
3–5	12	8	11	11	30
0–2	11	13	15	10	38
-1- -3	8	25	29	36	90
-4- -6	10	29	34	33	96
-7- -9	6	28	61	49	138
-10- -12	3	28	58	48	134
-13- -15	3	14	44	53	111
-16- -18		17	21	28	66
-19- -21		3	11	14	28
-22- -24			4	3	7
-25- -27			1	2	3
-28- -30				1	1
-31- -33					
Median	+1.3	-6.6	-8.75	-9.3	-8.5
S.D.	7.6	6.4	6.1	6.5	6.5
N	70	169	293	291	753

Validity Studies of the Check List

ONLY THREE STUDIES of the Check List have come to the attention of the author. One of these is based on a very small sample and hardly merits reporting except in the interest of presenting a complete record of research. These three studies have been collated in Table 19 and will be discussed in the following section.

In studying the relationship between the Check List and the Scale, O'Hare went through the case records of 120 boys at the Shirley Industrial School in Massachusetts noting the presence or absence of the factors listed in the Check List. Table 17 presents the distribution of the scores on the Check List of the institutionalized delinquents (open institution and security group) which reflects a heavy saturation of factors indicating proneness toward delinquency. This is in marked contrast to Patterson's findings on 434 public school boys and girls in grades 5–8 in the Barre City Schools, Vermont, most of whom were relatively free of the inimical factors that make up the Check List. Eighty-five per cent of the public school children were recorded as showing nine or less unfavorable items; less than one per cent of this large sample was found to be characterized by 30 or more factors listed in the Check List. In marked contrast O'Hare's distribu-

TABLE 17. Number of Items Checked "Yes" in Case Records of 95 Open-Institution Delinquents and 25 Security Unit Delinquents — Shirley Industrial School for Boys

Check List Scores	*Open School*	*Security Unit*	*Total*
44–45	2		2
42–43	5		5
40–41	5	5	10
38–39	2	2	4
36–37	10		10
34–35	4	1	5
32–33	16	4	20
30–31	15	5	20
28–29	8	3	11
26–27	11	2	13
24–25	4		4
22–23	5		5
20–21	2	3	5
18–19	3		3
16–17	1		1
14–15	1		1
12–13			
10–11	1		1
Mean	30.83	31.86	31.05
S.D.	6.80	6.16	6.68
N	95	25	120

tion reports that no delinquent had fewer than 10 factors present in his background; the average delinquent was found to be characterized by 31 of the variables.

Since these two studies were not planned with any controls or in parallel fashion a clear-cut comparison cannot be made. For example, Patterson's study includes girls and the group as a whole falls in a younger age bracket. At the same time it is assumed in the Patterson study that teachers filling in the Check List had access to all the information necessary to respond to each item. The large number of omits noted in the public school sample indicates that the number of items checked may be spuriously low due to absence of case history data.

Using the O'Hare sample of the 97 delinquents in the open institution, Kvaraceus[22] studied the relative frequency of each item as it was found to be present or absent in the case histories. Table 18 reveals the number of delinquents, arranged according to frequency, whose case data showed the presence and absence of each factor previously reported in the research literature as differentiating delinquents from their law-abiding foils. These differences had been classified in three categories: (I) Personal; (II) Environmental (home and family); (III) School. The ? caption indicates that the case records did not reveal sufficient information to enable the investigator to check either way. It will be noted that some items were found in a very large majority of cases whereas other items were noted rather infrequently. School personnel will be most interested in the preponderance of school items among the factors of highest incidence.

O'Hare investigated the correlations between the *K D Check List* and the *K D Proneness Scale* scores, intelligence (Wechsler-Bellevue) and chronological age. These are reported as follows: .254 with Scale scores; −.450 with Wechsler-Bellevue; .007 with chronological age. These correlations indicate no relationship between age and number of items checked, a slight positive correlation between the two prediction instruments and a rather significant negative correlation with intelligence test scores, as would be expected due to the presence of many items related to low ability and school retardation.

Patterson also reported correlations between the Check List and the Scale as follows: .318 for 84 boys and .121 for 78 girls. The lower correlation for girls is due somewhat to the homogeneity of the Check List scores for girls which fell within an 8 point range. The correlation of .254 between Scale and Check List reported by O'Hare falls between the two correlations in the Patterson study. All correlations are positive and reveal a slight tendency for those with positive proneness scores to have a large number of items recorded in the affirmative on the Check List. However, this tendency at best is slight and the two instruments can be considered to yield somewhat independent estimates of susceptibility or exposure to delinquency.

The O'Hare study represents an inquiry into the case records of older institutionalized delinquents as a partial validation of the *K D Prone-*

[22] William C. Kvaraceus, "A Partial Validation of the *K D Proneness Check List* via Case Records of Institutionalized Delinquents," *Forum of Education*, XLV (July, 1955), 28–30.

TABLE 18. Incidence of Items from *K D Proneness Check List* Appearing in Case Records of 97 Delinquents Committed to Shirley, Massachusetts, Industrial School for Boys[23]

Frequency				
Yes	No	?	Check List Item — Number and Factor	Category
92	5	0	10. Has previous record of delinquent behaviour.	I
88	6	3	26. Poor home discipline.	II
88	4	5	65. Is indifferent to or dislikes school.	III
87	6	4	8. Shows lack of success in out-of-school activities.	I
86	7	4	25. Emotional conflicts between parents and siblings.	II
83	6	8	60. Has little interest in schoolwork.	III
82	4	11	5. Reacts to situations in overly-aggressive manner.	I
81	3	13	68. Intends to leave school as soon as the law will allow.	III
77	17	3	61. Is unsuccessful in schoolwork.	III
77	12	8	67. Is truant from school frequently.	III
73	8	16	70. Takes little or no part in extra-curricular or club activities of school.	III
71	15	11	13. Associates with others who are or have been delinquent.	I
70	3	24	9. Avoids positions and activities involving responsibilities.	I
67	24	6	22. Relationships in family life unwholesome.	II
65	32	0	39. Family is large (five or more).	II
65	14	18	15. "Runs" with a "gang."	I
60	26	11	19. Seldom attends church or Sunday school.	I
60	37	0	21. Family broken by divorce, desertion, or death.	II
58	19	20	30. Much nagging among family members.	II
58	34	5	47. Lives in multi-family dwelling.	II
57	5	35	69. Feels that he does not belong to the class group.	III
56	35	6	31. Evidence of neglect.	II
56	18	23	7. Never belonged to a club or organization.	I
53	29	15	66. Transfers frequently from school to school.	III
53	7	37	14. Declares he is afraid of nothing.	II
50	42	5	53. Lives in under-privileged neighbourhood.	II
47	45	5	38. Parents have court records.	II
47	42	8	29. Drunkenness in family.	II
46	43	8	23. Emotional conflicts between parents.	II
46	37	14	54. Lives in high delinquency-rate area.	II
45	3	49	11. Evidences a philosophy of "good" or "bad" luck.	I
41	33	23	62. Has repeated one or more grades.	III
39	49	9	45. Mother is employed outside the home.	II
39	53	5	59. Has below average verbal ability.	III
38	19	40	12. Is satisfied with self.	I
37	55	5	46. Inadequate living quarters.	II
35	25	37	58. Lives in racially mixed neighbourhood.	II
34	42	21	44. Father is unskilled or slightly skilled worker.	II
34	59	4	2. Is below average in academic aptitude.	I
34	46	17	35. Extreme parental domination.	II
33	56	8	32. Is over-protected by family.	II
33	58	6	43. Record of family contacts with welfare agencies.	II
33	30	34	63. Grade placement too high for mental ability.	III
32	53	12	48. Overcrowding (more than 1.5 persons per room) prevails.	II
31	9	57	28. Feels disliked or unwanted.	II
29	60	8	49. Inadequate furnishings in home.	II
29	27	41	55. Has few facilities for play.	II
28	60	9	42. Family income inadequate for comfortable living.	II
27	64	6	57. Family rents home and pays less than prevailing average.	II
25	72	0	1. Is between 10 and 16 (if boy); 12 and 16 (if girl).	I
24	71	2	17. Has three or more siblings.	I
23	73	1	40. Family belongs to marginal group.	II
22	2	73	6. Attends movies at least twice a week.	I
22	60	15	27. Over-indulgence exhibited toward child.	II
20	74	3	51. Home unsanitary.	II

[23] W. C. Kvaraceus, *Ibid.*, p. 29.

Table 18 (*Continued*)

Frequency Yes	No	?	Check List Item — Number and Factor	Category
19	64	14	33. Intense rivalry among siblings.	II
18	63	15	64. Is in a special class.	III
17	80	0	41. Lives in other than natural home.	II
12	78	7	36. Cultural conflicts between parents and siblings.	II
11	82	4	16. Is the middle child in a large (five or more) family.	I
11	80	6	37. Delinquent brothers and/or sisters.	II
10	85	2	20. Birth unplanned or accidental.	II
10	82	5	52. Family is mobile or migratory.	II
9	83	5	18. Is slovenly and unkempt in appearance.	I
6	16	75	50. Family without automobile.	II
			56. Lives over business establishment.	II
2	95	0	4. Has physical defect.	I
1	96	0	3. Is in poor health.	I

ness Check List. His findings suggest that many of the characteristics listed in the Check List do show up in the case records of apprehended delinquents with a high frequency resulting in a saturation of factors associated or predisposing to the development of delinquent patterns of behavior. The study also reports that a number of items did not appear with any great frequency and might be omitted or de-emphasized in a revision of the Check List. In addition, this investigation indicates that the *K D Proneness Scale* and the *Check List*, while positively correlated, render somewhat independent estimates of delinquency proneness and could be used as two separate measures with little overlapping.

Francis Powers in reporting case histories of 10 adjudicated delinquents utilized the Check List in his information-gathering process. He reports a median number of "Yes" checks to be 31, with a range of 58 to 16. These results are in close agreement with O'Hare's findings and tend to confirm a high incidence of "Yes" responses for official delinquents.

The abbreviated summary, Table 19, for the three studies presents a clear picture of the heavy saturation of "Yes" checks for delinquents.

TABLE 19. Summary of Three Studies Reporting Check List Distributions for Delinquents and Non-Delinquents

	Institutional Delinquents	*Adjudicated Delinquents*	*General School Population Grades 5–8*	
Check List Scores	*Boys-f*	*Boys-f*	*Boys-f*	*Girls-f*
30 or more	76	6	1	1
10–29	44	4	41	24
1–9	0	0	184	183
N	120	10	226	208

vii

Some Problems to Be Faced in Prediction Studies of Delinquent Behavior[24]

ALL OF THE prediction instruments listed on page 5 report some validation data of a construct or concurrent type. One of these, the MMPI, does report some predictive validity data, but it represents a notable exception. The Glueck Tables which perhaps are the most widely known and most frequently referenced in the delinquency literature are only now undergoing "before-and-after" study. The same is true of the *K D Proneness Scale and Check List*.

What are the problems that must be met and overcome if these instruments are to be adequately appraised in terms of the job they actually set out to accomplish and if their predictive efficiency is to be increased?

The test maker must first face the problem presented by the nature of the behavioral phenomenon that is involved in the delinquent act. There is no dichotomy between the delinquent and non-delinquent. Delinquent behavior exists on a continuum and represents varying degrees of seriousness or habituation. The traditional sorting of subjects into two convenient criterion groups, adjudicated or legal delinquents and non-delinquents makes the naive assumption that all delinquent children are apprehended and that those who have not had court contacts are socially adjusted or of high morale. Recent studies[25] of unreported, and unofficial or hidden delinquency suggests that only a very small and selected fraction of offenses (1.5 per cent) for which the child might be apprehended actually become a matter of official record. This is to say that the officially noted delinquent represents a highly selected group of subjects and that a substantial part of the child population is behaving, at one time or another, like the officially noted delinquents, but do not carry the legal label.

The test maker in his item analysis or validation may undertake to use institutional delinquents — a special and hardy breed — court cases, unofficially heard court cases, or agency cases (other than the courts). The performances of these youngsters may then be pitted against the performances of a criterion group of non-delinquents or even of high morale youngsters. Unfortunately many of the latter may be acting like delinquents but may not have been so identified and labeled. It is therefore no surprise to find these two overlapping groups undifferentiated by the measures that are being employed to predict delinquent behavior.

What Must We Do?

Studies that attempt to identify future delinquents will need to define with greater precision the populations from which their samples are drawn. In turn, the samples on which the items are analyzed or the validity data are obtained must also be selected with greater care. An instrument that successfully predicts

[24] W. C. Kvaraceus, "Prediction Studies of Delinquency Behavior," *Personnel and Guidance Journal*, XXXIV (Nov. 1955), pp. 147–149.

[25] Fred J. Murphy, Mary M. Shirley, and Helen L. Witmer, *op. cit.*

the youngsters who will end up in one state training school may not be able to identify the type of youngster who may be placed on probation or who merely comes to the attention of some youth-serving agency like a child guidance clinic that deals with socially maladjusted. For example: two institutions for rehabilitation of young offenders may in fact have two very different delinquent populations, depending upon the selectivity of its own intake policy as well as on the whimsey or caprice of the juvenile court judge who may refer the large bulk of the cases to the institution. Intake policy in one center may screen out the mentally retarded, the physically handicapped, the serious emotional problem, and the nonreader; intake policy in a state institution may be so undefined and uncontrolled as to result in an omnibus enrolment. Validating instruments on samples drawn from either of these two institutions calls for two separate studies. An instrument validated for one of these populations could not be considered as valid for the other. Yet both institutions hold adjudicated delinquents.

To reiterate, the would-be predictor of delinquent behavior should be warned to define his delinquent population with precision, to draw his sample with care, and to restrict the use and interpretation of his data to the type of delinquent who made up the validation sample. What the test maker needs even before he starts building a prediction tool is, first, a reliable measure of degree of delinquency against which he may wish to correlate his initial score of delinquency proneness. This is not a situation in which he can expect to find any help in a biserial *r*.

Some instruments have attempted to isolate a number of major factors which have been found to differentiate between some delinquent and non-delinquent groups. For example, the three Glueck Prediction Tables each list five factors; the *K D Proneness Scale* lists 70 specific variables. While these measures attempt to capture the essential or significant differences between delinquents and non-delinquents, the sum of these observations may still be counterbalanced by the galaxy of minor factors that also impinge upon personal and social adjustment and which must be reckoned with in the attempt to predict social maladjustment. Atomizing factors affecting social adjustment and giving primacy to certain variables to the exclusion of all other information, as is done in the construction of check lists, scales, tables, and questionnaires, is to deny the dynamic interplay of all forces that impinge on behavior, delinquent or otherwise. What this implies is that the test-maker may need to seek out approaches that are more in line with multivariate analysis or to fall back on case study methods rather than on the more restricted information-gathering and treatment methods.

Needed: Predictive Validity Studies

Predictive validity can only come from a "before-and-after study" in which the prediction tool is first applied, then a reasonable time period (until the child's eighteenth birthday) is allowed for delinquent behavior to manifest itself, and, last, the degree of relationship between the initial measures and the degree of delinquency or freedom from delinquency is sought out. The fact that it is the exceptional prediction study

that boasts this design needs further investigation. A before-and-after study calls for long-term financing. It is beset by such difficult problems as family mobility, with attendant loss of cases. Financial support for delinquency studies lags far behind the support visible for other, less irritating, types of exceptionality such as the blind, the mentally retarded, the deaf, the homebound. In the current flurry of pseudo-interest and concern for the delinquent, nothing sobers up the political do-gooder, who is always for virtue and against sin, more than the dollar-bill sign or the price tag tied to delinquency prevention and control. Today the delinquent has much printer's ink spread in his behalf; but there is very little in the way of a budget that is being set up to help him. Little will be accomplished toward the development of prediction tools on the marginal time and personal budgets of professors. It is here that the great Foundations can lend much needed financial support.

Judging from the little evidence now available on the existing prediction tools, the question might be asked: "How effectively can we ultimately expect to spot future delinquents, given adequate financial resources and assuming that we can solve the problems of definition, sampling, and criterion?" A fair answer might be: "No better than current tests of academic ability predict academic achievement." Correlations in the high .50's have been reported, for example, between scores on the *K D Proneness Scale* and composite conduct ratings. These the writer would regard as phenomenally high; albeit the predictive efficiency remains low. Prediction tools for spotting delinquents, like intelligence tests, while imperfect, give a promise of some functional usefulness in understanding and helping deviate children — particularly if some of these obstacles can be overcome.

Needed Research

Against this background of major and minor validation projects which have been carried out with the *K D Proneness Scale and Check List* the question, "What further research?" may be raised. The following list of topics is presented as germinal and worthy of research effort.

1. Very few studies have been conducted on the reliability of these two measures. The author has reported in the Manual of Directions four test-retest reliability coefficients ranging from .71 to .81. These reliabilities are low. Further reliability checks should be conducted on various age, grade, and criterion groups with the attendant concern for ways and means to improve the reliability of such an instrument. As pointed out in the author's Manual, the present Scale, which is an opinion-like instrument, may be judged to be sufficiently reliable for use in spot checking and for survey purposes in the process of identification of groups of children who may be susceptible to the development of delinquent patterns of behavior. It should also be noted that no data have been forthcoming concerning the reliability of the Check List as an observation or recording tool.

2. Sorely needed are "before and after" studies to yield data as to the predictive validity of these two instruments. The following research design is suggested. All the pupils in grades 7–9 might be given the Scale and the Check List might be filled out on each subject. A three-year period of follow-up should be allowed. During this time, careful checks should be made using behavioral criteria on all subjects. After the three-year period the relationships between the proneness measures and the behavioral criteria should be thoroughly explored. Needless to say the design of this long-term project will necessitate financial support of considerable proportion.

3. The adequacy of the present key which is based on an original item analysis conducted by the author needs to be checked by a more elaborate study on a larger sample. This is particularly true of the girls' key which does not seem to hold up in some of the validation studies with notable exceptions. It is believed that the problem of the girl delinquent, usually a concealed or hidden phenomenon, presents a number of very difficult sampling obstacles.

4. A study of those items which appear to be exceptionally effective discriminators should be made. On the basis of these insights many more new items need to be written to enlarge the instrument and to bolster its reliability.

5. The possibilities of employing a pattern key of responses of various criterion groups might be explored noting not only the individual differentiating responses but an over-all design of responses for the various criterion groups. The hypothesis may be presented that there is a pattern visible in the constellation of responses of delinquents when compared to that of non-delinquents.

6. Special studies should be made of those individuals who show high positive scores (delinquency proneness) but who actually reveal exemplary behavior in their everyday adjustments and of those individuals who reveal high negative scores (freedom from delinquent tendencies) but whose everyday behavior indicates definite delinquent tendencies. In these extreme cases which tend to reduce markedly the validity coefficients in the different validity studies might be found a key for improving the Scale and the Check List.

7. A careful search might be conducted for more adequate criterion against which to measure this type of prediction tool. Only as the problem of outside criterion is answered more adequately will the validation studies provide any significant findings on which to base a qualitative appraisal of a prediction tool. Considering the low reliability of the Scale and the suspected low reliabilities of the subjectively derived criterion measures of "high and

low morale" that are frequently employed in validation experiments, the resulting correlation between such two measures may often be considered as "surprisingly high" albeit the predictive efficiency remains very low.

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